

What is claimed is:

1. A remote wastegate for a turbocharged internal combustion engine system, comprising

a housing having a passage defining a path for the flow of exhaust gases from an inlet end of the passage to an outlet end of the passage, and

a swing gate pivotally mounted in the passage for movement between a closed position that blocks the flow of exhaust gases through the passage and an open position that allows the flow of exhaust gases through the passage,

wherein the housing further includes a recess in the passage into which the swing gate is at least partially received in the open position to allow an unrestricted flow of exhaust gases through the passage.
2. A remote wastegate as set forth in claim 1, wherein when the swing gate is in the open position, a cross-sectional area of the flow path through the passage in the housing is substantially constant.
3. A remote wastegate as set forth in claim 1, further comprising an actuator connected to the wastegate housing for controlling the movement of the swing gate.

4. A remote wastegate as set forth in claim 3, wherein the actuator includes a control rod connected to the swing gate to move the swing gate between the open and closed positions.

5. A remote wastegate as set forth in claim 4, wherein the control rod generally acts in a direction aligned with at least a portion of the passage through the valve housing.

6. A remote wastegate as set forth in claim 4, wherein the control rod is connected to the swing gate with a pin and slot slider arrangement.

7. A remote wastegate as set forth in claim 3, wherein the valve housing defines a ninety degree angle in the flow path.

8. A remote wastegate as set forth in claim 3, wherein the swing gate seats perpendicular to the inlet end of the passage in the closed position.

9. A remote wastegate as set forth in claim 3, wherein the swing gate has a pivot point that lies outside the flow path.

10. A remote wastegate as set forth in claim 3, wherein the actuator includes an actuator housing, a diaphragm in the valve housing dividing the valve

housing into two compartments, a pressurized compartment and a nonpressurized compartment, a control rod interconnecting the diaphragm and the swing gate, and a spring within one of the compartments to apply a spring force to the control rod.

11. A remote wastegate as set forth in claim 3, wherein the actuator further includes an adjustable spring seat whose position can be changed to vary the installed spring length of the spring.

12. A remote wastegate as set forth in claim 1, wherein the swing gate pivots about a pivot point that is out of the flow path of the exhaust gases.

13. A kit for retrofitting a turbocharged engine system, comprising a wastegate as set forth in claim 1, and at least one section of conduit for making a bypass path to divert exhaust gases around the turbocharger.

14. A remote wastegate for a turbocharged internal combustion engine system, comprising

a housing having a passage defining a path for the flow of exhaust gases from an inlet end of the passage to an outlet end of the passage, and

a swing gate pivotally mounted in the passage for movement between a closed position that blocks the flow of exhaust gases through the passage and an open position that allows the flow of exhaust gases through the passage,

wherein the housing has a ninety degree actuator parallel to one leg of the housing and the swing gate moves from a position blocking the flow through one leg to an open position removed from the blocking position to permit flow through the one leg.

15. A remote wastegate as set forth in claim 14, wherein the swing gate includes a sealing surface that mates with a seat that circumscribes the one leg when in the closed position, and a recess in the passage receives at least a part of the swing gate when the swing gate is in the fully open position.

16. A remote wastegate as set forth in claim 15, wherein when in the open position the sealing surface of the swing gate lies in a plane transverse to both legs of the housing.

17. A remote wastegate as set forth in claim 14, wherein the housing forms approximately a ninety-degree angle between the legs.

18. A remote wastegate as set forth in claim 14, wherein when the wastegate is in the open position, it forms an angle of approximately forty-five degrees relative to at least one of the legs.

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